In the Claims:

Claims 1-9 (Cancelled).

10. (Currently Amended) A method for processing a bitstream of coded data of video sequences of progressive or interlaced pictures, the method comprising:

estimating motion vectors of groups of pixels belonging to a top half-frame of a current picture in relation to pixels belonging to a bottom half-frame of a preceding picture;

estimating motion vectors of groups of pixels of a bottom half-frame of the current picture in relation to pixels belonging to the top half-frame of the current picture;

calculating for ~~each macroblock of~~ the top half-frame and the bottom half-frame of the current picture a respective top motion coefficient and a bottom motion coefficient based upon the estimation of the motion vectors of the top half-frame and the bottom half-frame; and

recognizing the current picture as an interlaced picture by a substantial equality of a distribution of values of the motion coefficients, or as a progressive picture by a substantial inequality of the distributions of values of the motion coefficients.

11. (Currently Amended) A method according to Claim 10 wherein recognizing comprises:

comparing the top motion coefficients with a top threshold and comparing the bottom motion coefficients with a bottom threshold;

counting the motion vectors having motion coefficients lower than the top threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current picture for producing a pair of first and second coefficients; and

counting the motion vectors whose motion coefficients are greater than the bottom threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current picture for producing a second pair of third and fourth coefficients;

C2 wherein recognizing the current picture as progressive picture or an interlaced picture is based upon the first, second, third and fourth coefficients relative to the current picture and to the preceding pictures.

12. (Currently Amended) A method according to Claim 10 wherein the calculated values of the top and bottom motion coefficients are used to perform a preliminary test comprising:

summing the motion coefficients ~~of macroblocks~~ belonging to the top half-frame of the current picture for producing a top sum coefficient;

summing the motion coefficients ~~of macroblocks~~ belonging to the bottom half-frame of the current picture producing a bottom sum coefficient; and

defining the current picture as a progressive picture if the top sum coefficient and the bottom sum coefficient are lower than respective pre-established first and second positive numbers, otherwise proceeding with recognizing the current picture as an interlaced picture by

the substantial equality of the distributions of values of the motion coefficients or as a progressive picture by the substantial inequality of the distributions of values of the motion coefficients.

13. (Previously Presented) A method according to Claim 10 wherein recognizing comprises:

calculating a pair of first and second shape coefficients representing distributions of the top and bottom motion coefficients, respectively;

wherein recognizing the current picture a progressive picture or an interlaced picture is based upon whether the shape coefficients differ by a quantity greater or lower than a certain value, respectively.

14. (Previously Presented) A method according to Claim 10 wherein recognizing further comprises:

calculating a coefficient representing a stochastic correlation between distribution of the top and bottom motion coefficients;

wherein recognizing the current picture a progressive picture or an interlaced picture is based upon whether the calculated coefficient exceeds a certain value.

15. (Currently Amended) A method according to Claim 11 further comprising:

calculating a first ratio between the first coefficient relative to the current picture and the second coefficient relative to the preceding picture;

calculating a second ratio between the second coefficient relative to the current picture and the first coefficient relative to the current picture;

calculating a third ratio between the third coefficient relative to the current picture and the fourth coefficient relative to the preceding picture;

calculating a fourth ratio between the fourth coefficient relative to a current picture and the third coefficient relative to the current picture; and

comparing the first, second, third and fourth ratios with respective pre-established third, fourth, fifth and sixth positive numbers recognizing the current picture as a progressive picture if the first and fourth ratios are lower than the pre-established third and sixth positive numbers, respectively, and if simultaneously the second and third ratios are greater than the pre-established fourth and fifth positive numbers, respectively.

16. (Previously Presented) A method according to Claim 15 further comprising:

dividing the first and second ratios for producing a fifth ratio; and

dividing the third and fourth ratios for producing a sixth ratio;

wherein recognizing the current picture as a progressive picture is based upon results of comparing and if simultaneously the fifth and sixth ratios are greater than pre-established seventh and eighth numbers.

17. (Currently Amended) A method according to Claim 10 further comprising:

calculating a temporary weight value ~~for each elaborated picture~~ as a function of a result of recognizing the current picture as a progressive or interlaced picture; and

calculating a final weight value ~~for each elaborated picture~~ as a function of the temporary weight value relative to the current picture and of final weight values relative to preceding pictures;

wherein recognizing the current picture as a progressive or an interlaced picture depends on the temporary weight value relative to the current picture and on the final weight values relative to preceding pictures.

18. (Previously Presented) A method according to Claim 10 further comprising calculating motion vectors of a picture of the video sequences using a Frame-Prediction technique if the current picture is recognized as a progressive picture or using a Field-Prediction technique if the current picture is recognized as an interlaced picture.

19. (Previously Presented) A method according to Claim 10 wherein the video sequences are processed according to an MPEG standard.

20. (Currently Amended) A method for processing a bitstream of coded data of video sequences of progressive or interlaced pictures, the method comprising:

estimating motion vectors of groups of pixels

belonging to a top half-frame of a current picture in relation to pixels belonging to a bottom half-frame of a preceding picture;

estimating motion vectors of groups of pixels of a bottom half-frame of the current picture in relation to pixels belonging to the top half-frame of the current picture;

calculating for ~~each macroblock of~~ the top half-frame and the bottom half-frame of the current picture a respective top motion coefficient and a bottom motion coefficient based on the estimation of the motion vectors of the top half-frame and the bottom half-frame; and

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recognizing the current picture as an interlaced picture or as a progressive picture based upon distributions of values of the motion coefficients.

21. (Previously Presented) A method according to Claim 20 wherein a substantial equality of the distribution of values of the motion coefficients corresponds to an interlaced picture and a substantial inequality of the distributions of values of the motion coefficients corresponds to a progressive picture.

22. (Currently Amended) A method according to Claim 20 wherein recognizing comprises:

comparing the top motion coefficients with a top threshold and comparing the bottom motion coefficients with a bottom threshold;

counting the motion vectors having motion coefficients lower than the top threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current

picture for producing a pair of first and second coefficients; and

counting the motion vectors whose motion coefficients are greater than the bottom threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current picture for producing a second pair of third and fourth coefficients;

wherein recognizing the current picture as progressive picture or an interlaced picture is based upon the first, second, third and fourth coefficients relative to the current picture and to the preceding pictures.

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23. (Currently Amended) A method according to Claim 20 wherein the calculated values of the top and bottom motion coefficients are used to perform a preliminary test comprising:

summing the motion coefficients ~~of macroblocks~~ belonging to the top half-frame of the current picture for producing a top sum coefficient;

summing the motion coefficients ~~of macroblocks~~ belonging to the bottom half-frame of the current picture producing a bottom sum coefficient; and

defining the current picture as a progressive picture if the top sum coefficient and the bottom sum coefficient are lower than respective pre-established first and second positive numbers, otherwise proceeding with recognizing the current picture as an interlaced picture by the substantial equality of the distributions of values of the motion coefficients or as a progressive picture by the substantial inequality of the distributions of values of the

motion coefficients.

24. (Previously Presented) A method according to Claim 20 wherein recognizing comprises:

calculating a pair of first and second shape coefficients representing distributions of the top and bottom motion coefficients, respectively;

wherein recognizing the current picture a progressive picture or an interlaced picture is based upon whether the shape coefficients differ by a quantity greater or lower than a certain value, respectively.

25. (Previously Presented) A method according to Claim 20 wherein recognizing further comprises:

calculating a coefficient representing a stochastic correlation between distribution of the top and bottom motion coefficients;

wherein recognizing the current picture a progressive picture or an interlaced picture is based upon whether the calculated coefficient exceeds a certain value.

26. (Currently Amended) A method according to Claim 21 further comprising:

calculating a first ratio between the first coefficient relative to the current picture and the second coefficient relative to the preceding picture;

calculating a second ratio between the second coefficient relative to the current picture and the first coefficient relative to the current picture;

calculating a third ratio between the third coefficient relative to the current picture and the fourth coefficient relative to the preceding picture;

calculating a fourth ratio between the fourth coefficient relative to a current picture and the third coefficient relative to the current picture; and

comparing the first, second, third and fourth ratios with respective pre-established third, fourth, fifth and sixth positive numbers recognizing the current picture as a progressive picture if the first and fourth ratios are lower than the pre-established third and sixth positive numbers, respectively, and if simultaneously the second and third ratios are greater than the pre-established fourth and fifth positive numbers, respectively.

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27. (Previously Presented) A method according to Claim 26 further comprising:

dividing the first and second ratios for producing a fifth ratio; and

dividing the third and fourth ratios for producing a sixth ratio;

wherein recognizing the current picture as a progressive picture is based upon results of comparing and if simultaneously the fifth and sixth ratios are greater than pre-established seventh and eighth numbers.

28. (Currently Amended) A method according to Claim 20 further comprising:

calculating a temporary weight value ~~for each elaborated picture~~ as a function of a result of recognizing

the current picture as a progressive or interlaced picture; and

calculating a final weight value ~~for each elaborated picture~~ as a function of the temporary weight value relative to the current picture and of final weight values relative to preceding pictures;

wherein recognizing the current picture as a progressive or an interlaced picture depends on the temporary weight value relative to the current picture and on the final weight values relative to preceding pictures.

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29. (Previously Presented) A method according to Claim 20 further comprising calculating motion vectors of a picture of the video sequences using a Frame-Prediction technique if the current picture is recognized as a progressive picture or using a Field-Prediction technique if the current picture is recognized as an interlaced picture.

30. (Previously Presented) A method according to Claim 20 wherein the video sequences are processed according to an MPEG standard.

31. (Currently Amended) A video processor for processing a bitstream of coded data of video sequences of progressive or interlaced pictures, the video processor comprising:

a first estimator for estimating motion vectors of groups of pixels belonging to a top half-frame of a current picture in relation to pixels belonging to a bottom half-frame of a preceding picture;

a second estimator for estimating motion vectors of group of pixels of a bottom half-frame of the current picture in relation to pixels belonging to the top half-frame of the current picture;

a calculator for calculating for ~~each macroblock of~~ the top half-frame and the bottom half-frame of the current picture a respective top motion coefficient and a bottom motion coefficient depending on the estimation of the motion vectors of the top half-frame and the bottom half-frame; and

a detector for recognizing the current picture as an interlaced picture or as a progressive picture based upon the distributions of values of the motion coefficients.

32. (Previously Presented) A video processor according to Claim 31 wherein a substantial equality of the distribution of values of the motion coefficients corresponds to an interlaced picture and a substantial inequality of the distributions of values of the motion coefficients corresponds to a progressive picture.

33. (Currently Amended) A video processor according to Claim 31 wherein said detector:

compares the top motion coefficients with a top threshold and comparing the bottom motion coefficients with a bottom threshold;

counts the motion vectors having motion coefficients lower than the top threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current picture for producing a pair of first and second coefficients; and

counts the motion vectors whose motion coefficients are greater than the bottom threshold ~~of~~ with respect to the top half-frames and the bottom half-frames of the current picture for producing a second pair of third and fourth coefficients;

wherein said detector recognizes the current picture as a progressive picture or as an interlaced picture based upon the first, second, third and fourth coefficients relative to the current picture and to the preceding pictures.

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34. (Currently Amended) A video processor according to Claim 31 wherein said ~~third module~~ comparator for calculating values of the top and bottom motion coefficients performs a preliminary test comprising:

summing the motion coefficients ~~of macroblocks~~ belonging to the top half-frame of the current picture for producing a top sum coefficient;

summing the motion coefficients ~~of macroblocks~~ belonging to the bottom half-frame of the current picture producing a bottom sum coefficient; and

defining the current picture as a progressive picture if the top sum coefficient and the bottom sum coefficient are lower than respective pre-established first and second positive numbers, otherwise proceeding with recognizing the current picture as an interlaced picture by the substantial equality of the distributions of values of the motion coefficients or as a progressive picture by the substantial inequality of the distributions of values of the motion coefficients.

35. (Previously Presented) A video processor according to Claim 31 wherein said detector:

calculates a pair of first and second shape coefficients representing distributions of the top and bottom motion coefficients, respectively;

said detector recognizes the current picture as a progressive picture or as an interlaced picture based upon whether the shape coefficients differ by a quantity greater or lower than a certain value, respectively.

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36. (Previously Presented) A video processor according to Claim 31 wherein said detector:

calculates a coefficient representing a stochastic correlation between distribution of the top and bottom motion coefficients;

said detector recognizes the current picture as a progressive picture or as an interlaced picture based upon whether the calculated coefficient exceeds a certain value.

37. (Currently Amended) A video processor according to Claim 33 wherein said detector:

calculates a first ratio between the first coefficient relative to the current picture and the second coefficient relative to the preceding picture;

calculates a second ratio between the second coefficient relative to the current picture and the first coefficient relative to the current picture;

calculates a third ratio between the third coefficient relative to the current picture and the fourth coefficient relative to the preceding picture;

calculates a fourth ratio between the fourth coefficient relative to a current picture and the third coefficient relative to the current picture; and

compares the first, second, third and fourth ratios with respective pre-established third, fourth, fifth and sixth positive numbers recognizing the current picture as a progressive picture if the first and fourth ratios are lower than the pre-established third and sixth positive numbers, respectively, and if simultaneously the second and third ratios are greater than the pre-established fourth and fifth positive numbers, respectively.

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38. (Currently Amended) A video processor according to ~~Claim 31~~ Claim 37 wherein said detector:

divides the second and first ratios for producing a fifth ratio; and

divides the third and fourth ratios for producing a sixth ratio;

said detector recognizes the current picture as a progressive picture or as an interlaced picture based upon results of the comparing ~~by said eighth sub-module~~ and if simultaneously the fifth and sixth ratios are greater than pre-established seventh and eighth numbers.

39. (Currently Amended) A video processor according to Claim 31 wherein said detector:

calculates a temporary weight value ~~for each elaborated picture~~ as a function of a result of recognizing the current picture as a progressive or interlaced picture; and

calculates a final weight value ~~for each elaborated picture~~ as a function of the temporary weight value relative to the current picture and of final weight values relative to preceding pictures;

said detector recognizes the current picture as a progressive picture or as an interlaced picture based upon the temporary weight value relative to the current picture and on the final weight values relative to preceding pictures.

40. (Previously Presented) A video processor according to Claim 31 wherein the bitstream of coded data of video sequences are processed according to an MPEG standard.